

Fabric-Based Battery-Assisted Passive RFID Tags

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Fully-flexible BAP (Battery-Assisted Passive) RFID tags that are exclusively printed on fabrics.

Conventional Electronics

Antenna



Sensor Battery

Reader

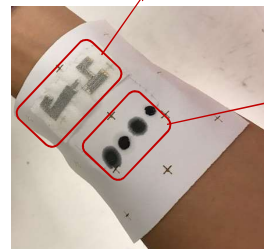


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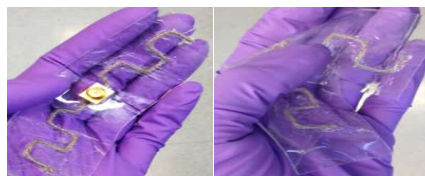


Flexible Electronics

Antenna

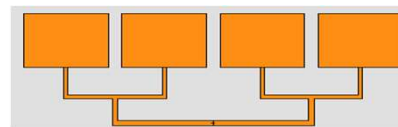


Battery + Sensor



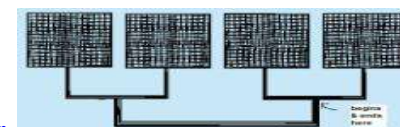
Realization of E-Textile Antennas

HFSS model



Export to specific computer program

Digitization

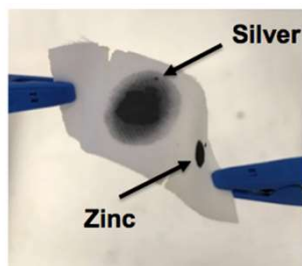
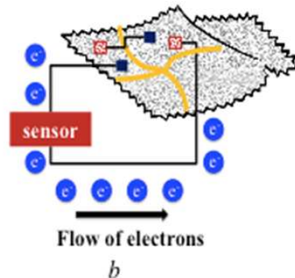
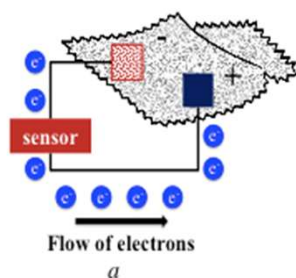


Embroidered antenna

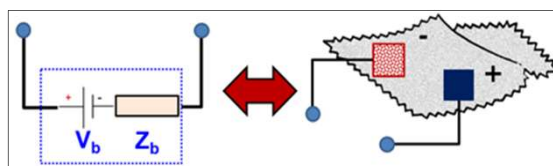


Realization of Electrochemical Battery

■ Cathode ■ Anode — Hydrophobic separator — Electrical connections — Fabric moistened by conductive liquid electrolyte



Equivalent Circuit



Proof-of-Concept Results

